

Appl. No.: 09/963,360  
Amdt. Dated: 02/09/2007  
Off. Act. Dated: 11/09/2006

### **REMARKS/ARGUMENTS**

Reconsideration of this application is respectfully requested in view of the foregoing amendments and discussion presented herein.

1. **Rejection of Claim 72 and 74-75 under 35 U.S.C. §112, first paragraph.**

Claims 31-33, 35-39, 69-76 and 79-80 were rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement. In particular, the Examiner stated that it was "Claims 31 and 79 recite a bed of 'granular support media.' However there does not appear to be any support for this limitation in the application."

In response, the Applicant has amended Claim 31, 35, 74-75 and 79-80 to overcome the rejection. Furthermore, the Applicant respectfully disagrees that the limitation of a "support media" or "substrate" is not supported by the specification.

Over the course of examination, the Examiner found that the original phrase "support substrate" used in the specification and claims was indefinite. The bed of support spheres is shown in FIG. 4, FIG. 5 and FIG. 6 and described primarily at Page 14, lines 10-22 of the specification. Although plastic spheres that are approximately  $\frac{3}{4}$  of an inch in diameter are described and preferred, a bed using other shapes and sizes may be selected depending on the size and characteristics of the material that is to be dehydrated.

Because the Examiner considered the support substrate of spheres to be the same as a perforated metal sheet or screen or air, the Applicant attempted to clarify the language by using terms such as "particulate" or "granular" with "support media" or "support substrate" to emphasize the particulate nature of the bed of support spheres. The Examiner found the terms "particulate" and "granular" to be unacceptable and not supported by the language of the specification.

The latest attempt of the Applicant to describe the bed of support members is shown in the present amendments.

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The presence of the support spheres in the apparatus claimed by the Applicant is significant. The support substrate provides a substantial amount of surface area and divides and separates food pieces so that they have a uniform exposure to the heat and airflow. The support substrate also allows the temperature and airflow volumes to be substantially less than found in traditional dehydration units. Consequently, the dehydrated material is not overheated and the nutrient content and color are maintained.

In contrast, the prior art fluid bed, referred to by the Examiner, requires high temperatures and air flow rates to keep the food pieces airborne and produces inconsistent dehydration, diminished color and nutrient content, and inefficient dehydration.

Accordingly, the Applicant submits that the specification provides support for the bed of support spheres in sufficient detail to support the language of the claims. The Applicant therefore requests that the rejection of Claims 31-33, 35-39, 69-76 and 79-80 under 35 U.S.C. § 112 (1) be withdrawn.

2. Rejection of Claims 31-80 under 35 U.S.C. § 103(a).

Claims 31-80 have been rejected under 35 U.S.C. § 103(a) as being obvious in view of a *Oates*, U.S. No. 3,214,844 or *Scott*, U.S. No. 4,419,834 in combination with newly cited foreign patents described only by the abstracts dealing with ultrasound.

However, all of the combinations are based on "fluid bed" patents that are well known in the art. Both the *Oates* and *Scott* patents function by creating a "fluidized bed," which is a term of art. A fluidized bed is defined by engineers as "A contained mass of finely divided solids will behave like a fluid when brought into suspension in a moving gas." In order for the mass of pieces to be brought into suspension, the moving gas must reach a "critical velocity." In *Oates* and *Scott*, typical fluidized bed machines, material is piled on a perforated metal table or screen. Heated air is forced from below the table or screen through the perforations at sufficient volumes and velocity that the

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material becomes airborne. There is a range of air flow rates in a fluidized bed that will function with minimum and maximum thresholds. If the air flow maximum is exceeded the fluid bed will fail and the material will be blown out of the exhaust structures.

Because there is a pressure drop from one side of the perforated table or screen that increases with the presence of material on the screen, the blowers must provide air to the perforated table at sufficient volumes and velocity to create airstreams through the perforations that will be at the critical velocity so that the material will become airborne. In addition, the air velocity in the intake ducts or from the blower will depend on the cross-section of the ducts and such number descriptions in the references are not necessarily comparable either to each other or the claimed volumes or velocities. The same may be true for the temperatures recited in the cited references.

Accordingly, the fluidized bed patents of *Scott* and *Oates* inherently describe and require a range of air velocities that will permit the formation of a fluidized bed and are not "merely preferred methods of using the claimed apparatus" as suggested by the Examiner. Conditions outside of this range are not taught or obvious.

Many of the claims are rejected based on the combination of the primary reference of either *Oates* or *Scott* and the abstract of the JP09113132A ("JP"). Without much discussion, the Examiner states that it would have been obvious to combine the fluid bed of *Oates* or *Scott* with the "ultrasound source" of JP09113132A.

However, there is nothing in the JP reference that would suggest that ultrasound would have the same effect on moving materials within a fluidized bed as with stationary materials in a conventional dehydrator. The fluidized bed functions, in part, by evaporating surface liquid arising from the mechanical impacts of the pieces of material with each other. There is nothing in *Oates* or *Scott* references that would suggest the combination of an ultrasound source with a fluidized bed, even if such a combination was within the scope of the language of the claims. In order for the combination to according to the disclosures of the references and function, the material to be dried must be stationary i.e. not moving within a fluidized bed.

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The proposed modifications would change the principle of operation of both the principle and secondary reference. Either the fluidized bed function of Scott or Oates is eliminated or the ultrasound of the JP reference to fluid particles and interfering structures and is outside of the scope of the disclosure.

The proposed modifications of the structure of the primary and secondary references are relevant to the analysis of "obviousness." The case of *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) is illustrative. The court reversed the rejection holding the "*suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate.*" 270 F.2d at 813, 123 USPQ at 352.). See MPEP §2143.01 (VI.) Similarly, MPEP2143.01 (III) states, "...Although a prior art device *may be capable of being modified to run the way the apparatus is claimed, there must be a suggestion or motivation in the reference to do so.*" 916 F.2d at 682, 16 USPQ2d at 1432.)."

The claimed invention does not have a fluidized bed and has benefits and advantages over that type of apparatus. In particular, the bed of support spheres (absent from all of the combinations) allows for greatly reduced airflow and temperature ranges that are below the threshold required for the fluidized bed. The direction of the airflow is not limited to an updraft at the critical velocity. Reduced temperatures and air volumes not only result in more efficient dehydration, improved color and nutrition, it results in reduced operational costs over the prior art.

**a) Rejection of Claims 59-61, 69-74 and 76-78 under 35 U.S.C. § 103(a)**

Claims 59-61, 69-74 and 76-78 were rejected under 35 U.S.C. § 103(a) as being obvious and therefore unpatentable over Oates (U.S. No. 3,214, 844) or Scott (U.S. 4,419,834) in view of the abstract of Japanese patent (JP 09113132A).

The combination of the Oates or Scott and JP references does not render the claimed invention because at least one claimed element of the invention is not found in

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the combination. Specifically, the combination does not have a bed of spherical support members, airflows or temperatures claimed by the Applicant. Additionally, the airflow can be directed down through the bed rather than up through the bed.

Furthermore, there is no incentive, suggestion or motivation to make the combination of JP and Oates or Scott articulated by the Examiner because it would change "the principle of operation of the prior art invention being modified." MPEP §2143.01 (VI.) As discussed above, the fluid bed type of machines shown in Oates requires a minimum threshold air flow rate in order to function i.e. put the particles in motion and suspended in the air streams. Not only is there a minimum airflow requirement; there is a maximum airflow limitation as well. If the maximum airflow limitation is exceeded, the fluid bed is not created and the material to be dried is blown out into the exhaust. The fluid bed uses mechanical agitation and evaporation to dehydrate. Accordingly, there is a size and weight limitation in the type of material that can be dried in a fluid bed. For example, large material such as meat chunks or very fine particulate materials cannot be used with a fluid bed.

In contrast, the present invention does not have these threshold limitations and the airflow velocity and volume are about three times less than the requirements of a typical fluid bed as disclosed in Scott or Oates. (The Oates fluid bed patent discloses flow rates of 800-900 to 3500 feet per minute).

Therefore, the Applicant respectfully submits that the proposed combination does not render the invention obvious and that there is no suggestion, motivation or incentive found in either Scott or Oates to make the combination and the rejection under Section 103 should be withdrawn.

**b) Rejection of Claims 31-33, 35, 37-39 and 79-80 under 35 U.S.C. § 103(a)**

Claims 59-61, 69-74 and 76-78 were rejected under 35 U.S.C. § 103(a) as being obvious and therefore unpatentable over Oates (U.S. No. 3,214, 844) or Scott (U.S. 4,419,834) in view of the abstract of Japanese patent (JP 09113132A) and further in

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view of Bussman et al. (U.S. No. 6,000,144).

Contrary to the statement of the Examiner, the Bussman patent does not disclose a drying bed or a bed of "a plurality of unjoined spherical support members" as claimed. The granular material that is used to "heat or cool" that is disclosed in Bussman is composed of "Silicon dioxide" or "Zeolites" or a "ferromagnetic material" and does not have the structure or function as claimed by the Applicant (See Col. 4, lines 14-67). The Bussman material "is capable of absorbing or giving up heat to its environment in a reversible process." (Col. 4, lines 62-65). The drying bed of claimed by the Applicant does not cook or roast the food or remove heat from the food as shown in Bussman. Rather it supports and separates the food particles or slurry or other material to be dried.

Furthermore, there is no suggestion, incentive or motivation to combine the Bussman pellets with the ultrasound because they would absorb or reflect the waves and create "hot points" or areas of intensity that would interfere with the drying process even if ultrasound would work with a fluidized bed apparatus.

A prime facie case of obviousness is not shown when the proposed combination does not have all of the limitations of the claims and there is no likelihood of success or there is no suggestion, incentive or motivation to make the proposed combination found in the references themselves. The combinations proposed by the Examiner are deficient for the reasons discussed above and there is no suggestion, incentive or motivation in the references to substitute incompatible elements. Accordingly, the rejections based on Section 103(a) should be withdrawn.

#### 4. Conclusion.

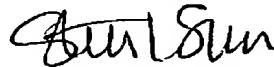
In view of the above the new claims and each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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The Applicant also respectfully requests a telephone interview with the Examiner in the event that there are questions regarding this response, or if the next action on the merits is not an allowance of all pending claims.

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Respectfully submitted,



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